

CLAIMS

What is claimed is:

1. A supporting device of a rotor, which comprises:

a ceramic axial tube which is a hollow tube with one end opening fixed on and closed by the rotor, and the other end opening closed by a lid, to allow a space formed within the ceramic axial tube to store lubricants;

at least one ceramic axial support rotationally supporting the ceramic axial tube; and
a permeable structure formed on the ceramic axial tube to allow the lubricants leaking out from inside of the ceramic axial tube.

2. The supporting device of the rotor of claim 1, wherein the rotor is a heat-dissipation fan.

3. The supporting device of the rotor of claim 1, wherein the spacing between the outer surface of the ceramic axial tube and the inner surface of the ceramic axial support is within the range of 2-25 μm .

4. The supporting device of the rotor of claim 1, wherein ceramic powders of a metal oxide selected from the group consisting of aluminum oxide, zirconium oxide, silicon oxide and a mixture thereof are used and uniformly formulated with a plastic agent, an assisting agent and a dispersing agent at a predetermined ratio.

5. The supporting device of the rotor of claim 1, wherein the permeable structure is a thin slot formed on the ceramic axial tube.

6. The supporting device of the rotor of claim 1, wherein the permeable structure is a hole formed on the ceramic axial tube.

7. The supporting device of the rotor of claim 1, wherein the lubricant is a fluoride-containing lubricant with a particle diameter smaller than 1 μm .

- Sub 8. A supporting device of a rotor, which comprises:

a ceramic axial tube which is a hollow tube with one end fixed on the rotor and is formed with at least one concave on the outer surface; and

a ceramic axial support which may rotationally support the ceramic axial tube, wherein a storage space for lubricants is defined by the inner surface of the ceramic axial support and the concave on outer surface of the ceramic axial tube.

9. The supporting device of the rotor of claim 8, wherein the spacing between the outer surface of the ceramic axial tube and the inner surface of the ceramic axial support is within the range of 2-25 μm .

10. The supporting device of the rotor of claim 8, wherein ceramic powders of a metal oxide selected from the group consisting of aluminum oxide, zirconium oxide, silicon oxide and a mixture thereof are used and uniformly formulated with a plastic agent, an assisting agent and a dispersing agent at a predetermined ratio.

Sub 7
a2 11. The supporting device of the rotor of claim 8, wherein the concave is formed in the middle circular concave part of the ceramic axial tube.

12. The supporting device of the rotor of claim 8, wherein the lubricant is a fluoride-containing lubricant with a particle diameter smaller than 1 μm .

Sub 7
a3 13. A supporting device of a rotor, which comprises:

a ceramic axial tube which is a hollow tube with one end fixed on the rotor, and at least one ceramic axial support which rotationally support the ceramic axial tube by a rotational corresponding spacing within the range of 2-25 μm .

14. The supporting device of the rotor of claim 13, wherein the outer surface of the ceramic axial tube is formed as a non-cylindrical surface.

15. The supporting device of the rotor of claim 13, wherein the inner surface of the ceramic axial tube is formed as a non-cylindrical surface.

16. The supporting device of the rotor of claim 13, wherein ceramic powders of a metal oxide selected from the group consisting of aluminum oxide, zirconium oxide, silicon oxide and a mixture thereof are used and uniformly formulated with a plastic agent, an assisting agent and a dispersing agent at a predetermined ratio.